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**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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*Ex parte* MICHAEL LEE

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Appeal 2008-4647  
Application 10/619,295  
Technology Center 3700

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Decided: January 29, 2009

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Before DEMETRA J. MILLS, LORA M. GREEN, and  
RICHARD M. LEOVITZ, *Administrative Patent Judges*.

MILLS, *Administrative Patent Judge*.

**DECISION ON APPEAL**

**STATEMENT OF CASE**

This is an appeal under 35 U.S.C. § 134. The Examiner has rejected the claims for anticipation and obviousness. We have jurisdiction under 35 U.S.C. § 6(b).

The following claims are representative.

20. A golf club head comprising:

- a sole;
- a top edge opposite the sole;
- a hosel;
- a front surface defining a strike face;
- a rear surface opposite the front surface, the rear surface including a blade surface and a muscle back surface, the blade surface being near the top edge and substantially parallel to the front surface, the muscle back surface being near the sole and having no visible cavity thereon;
- a muscle back portion including an extra mass portion interposed between the front surface and the muscle back surface and defining a cavity disposed vertically towards an upper portion of the extra mass portion, wherein the cavity is not visible from the exterior of the golf club and a substantial portion of the extra mass portion being positioned below the cavity; and
- an elastomer material at least substantially filling the cavity, wherein the elastomer material has a specific gravity less than the material displaced by the cavity.

22. A golf club head comprising:

- a thin sole;
- a top edge;
- a hosel;
- a front surface defining a strike face;
- a rear surface opposite the front surface, the rear surface including an at least substantially flat blade surface and a contoured muscle back surface, the blade surface extending to the top edge and the muscle back surface being near the sole, a distance between the front surface and the rear surface adjacent the top edge being greater than a distance between the front surface and the rear surface adjacent the sole;
- a muscle back portion interposed between the front surface and the muscle back surface and defining a cavity disposed toward an upper portion of the muscle back portion, such that a large portion of the muscle back portion is positioned under the cavity so that mass is still concentrated towards the bottom of the club head, wherein the cavity is not visible from the exterior of the golf club; and

an insert comprising a high-rebound material disposed in the cavity.

*Cited References*

Elkins, Jr.	DES 244,558	May 31, 1977
Elkins, Jr.	US 4,128,242	Dec. 5, 1978
Motomiya	US 4,438,931	Mar. 27, 1984
Yamada	US 5,328,175	Jul. 12, 1994
Viollaz	US 5,447,311	Sep. 5, 1995
Golden	US 6,551,200 B1	Apr. 22, 2003
Rife	US 2003/0139225 A1	Jul. 24, 2003
Sogaishi	JP4-332573	Nov. 19, 1992

*Grounds of Rejection*

1. Claims 6, 7, 9, 10, 20, 22, 23, 26, and 27 stand rejected 35 U.S.C. § 103 as obvious over Elkins ‘558 in view of Elkins ‘242, Viollaz, and Motomiya. We select claims 20 and 22 as representative of the rejection before us since Appellants have not separately argued the other claims. 37 C.F.R. 41.37(c)(1)(vii).

ISSUE

The Examiner contends that the cited references, particularly Viollaz, disclose a cavity disposed vertically towards an upper portion of the extra mass portion. (Ans. 5-6.)

Appellant contends that the cited references, particularly Viollaz, does not disclose a cavity disposed vertically towards an upper portion of the extra mass portion. (App. Br. 4.)

The issue is: Do the cited references, particularly Viollaz, disclose a cavity disposed vertically towards an upper portion of the extra mass portion?

## FINDINGS OF FACT

The Examiner finds that (and we concur):

1. Elkins (D244,558) discloses head having a blade surface and a muscle back surface having an extra mass portion (Fig. 6), a muscle back surface having an upper ledge that generally follows the contour of the top edge (Figs. 1-2), a blade surface being near a top edge and substantially parallel to the front face (Figs. 1-2, and 6-7), a muscle back portion covering at least half of the surface area of the rear surface (Fig. 1), and a thin sole and the distance between the front surface and the rear surface adjacent the sole is less than the distance between the front surface adjacent the top edge in the form of the lower edge ends with a point (Fig. 6).

(Ans. 4-5.)

2. Elkins (D244,558) lacks a cavity disposed in a muscle back portion with the cavity not visible from the exterior of a club and having no visible cavity thereon, a cavity vertically spaced from the sole, a substantial portion of the extra mass portion being positioned below the cavity, an elastomer at least substantially filling a cavity and an elastomer being a polyurethane.

(Ans. 5.)

3. Elkins (4,128,242) discloses a head having a blade surface and a muscle back surface (Fig. 7), a cavity (53) disposed in a muscle back portion with a cavity (Figs. 7-8), a cavity vertically spaced from a sole (Fig. 7) and the cavity not visible from the exterior of a club in the form of being able to able to pour a filler into the cavity (53) and then placing a plug (55) over the cavity (Col. 12, Lns. 30-45) in order to have the moment of inertia about the center of gravity maximized by positioning weight at the heel and toe and in order to add effective loft to a head by having a center of gravity low (Col. 12, Lns. 19-67).

(Ans. 5.)

4. In view of the patent of Elkins (4,128,242) it would have been obvious to modify the head of Elkins (D244,558) to have a cavity disposed in a muscle back portion with the cavity not visible from the exterior of a club and a cavity vertically spaced from the sole in order to 'have the moment of inertia about the center of gravity maximized by positioning weight at the heel and toe and in order to add effective loft to a head by having a center of gravity low.

(Ans. 5.)

5. "Elkins (D244,558) has a lip at the back sole which one skilled in the art may define as forming a cavity on the back of the muscle back portion." (Ans. 5-6.)

6. Viollaz discloses a cavity not visible from an exterior of a club, a cavity vertically spaced from the sole (Figs. 4-5), a thin sole (Fig. 4), a muscle back surface being rounded and having no visible cavity thereon (Figs. 2-3), a substantial portion of the extra mass portion being positioned below the cavity in the form of the bottom cavity wall being a substantial greater thickness than the top cavity wall (Fig. 4) and a cavity substantially filled with a foamed urethane in the form of polyurethane (Col. 2, Lns. 46-50).

(Ans. 6.) Figure 4 of Viollaz shows a large portion of the muscle back portion, labeled as element 11 in the figure, positioned under the cavity 5 so that its mass is concentrated towards the bottom of the club head. Note Viollaz, Fig. 4, element 11 below the cavity is thicker and wider than Fig. 4, element 3, above the cavity.

7. In view of the patent of Viollaz it would have been obvious to modify the head of Elkins (D244,558) to have no lip where the muscle back surface intersection with the sole surface, and a substantial

portion of the extra mass portion being positioned below the cavity in order to have a more rounded intersection where the rear surface and the sole surface intersect and as such have a head with less interaction with the ground when impacting the back of the sole with the ground when impacting a ball on the ground and still have a weighted sole section. As such there would be a muscle back portion having no visible cavity thereon.

(Ans. 6.)

8. In view of the patent of Viollaz it would have been obvious to modify the head of Elkins (D244,558) to have the cavity substantially filled with foamed polyurethane in order to provide vibration dampening to a head at impact and in order to utilize a shock absorption material placed inside heads used in the market place.

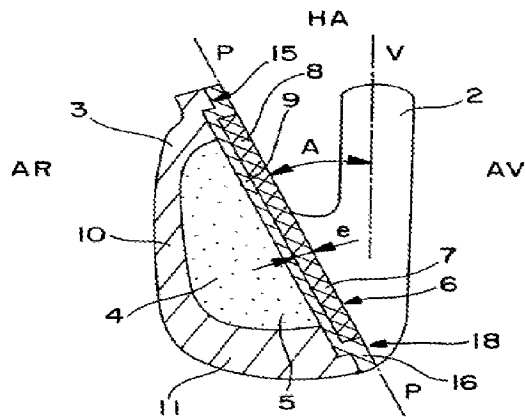
(Ans. 6.)

9. “Motomiya discloses filling a sealed space with an elastic filler material such as foamed urethane and rubber (Col. 2, Lns. 14-16).” (Ans. 6.)

10. In view of the patent of Motomiya it would have been obvious to modify the head of Elkins (D244,558) to have a polyurethane being a high rebound foamed elastomer filling a cavity in order to utilize a type of urethane shock absorption material used in the market place inserted in cavities of heads.

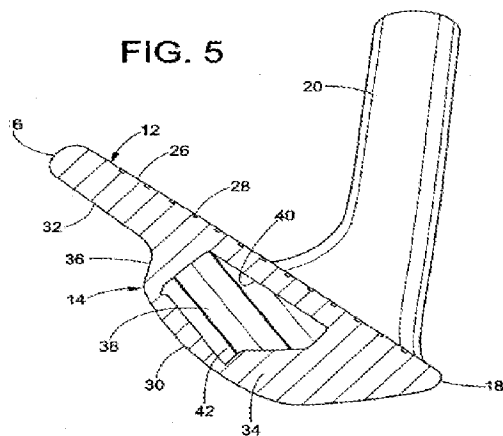
(Ans. 6-7.)

10. Figure 4 of Viollaz is reproduced below. Figure 4 shows a weighted golf club having a central cavity.



**FIG. 4**

11. The Specification, Figure 5 is reproduced below. Figure 5 shows a weighted golf club in accordance with the claimed invention.



## PRINCIPLES OF LAW

“In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a prima facie case of obviousness.” *In re Rijckaert*, 9 F.3d 1531, 1532 (Fed. Cir. 1993) (citations omitted). Only if that burden is met, does the burden of coming forward with evidence or argument shift to the applicant. In order to determine whether a prima facie case of obviousness has been established, we considered the factors set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1996); (1) the scope and



content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the relevant art; and (4) objective evidence of nonobviousness, if present.

## ANALYSIS

Appellant contends that “Viollaz, in FIG. 4, shows an internal cavity that is centered with respect to the face of the golf club head - the cavity is not disposed vertically towards an upper portion of the extra mass portion.” (App. Br. 4.) “Other than the cavity having a general triangular shape, as seen in cross-sections along planes perpendicular to the hitting plane (col. 1, lines 64- 66), nothing much else is taught with regard to the location of the cavity in Viollaz.” (App. Br. 4.)

Appellant argues that, “one skilled in the art would simply rely on the figures of Viollaz, which show that the cavity is centered in any arguable muscle back portion found in Viollaz as opposed to being disposed toward an upper portion of the muscle back portion.” (App. Br. 4.) Additionally, Appellant contends that neither Elkins reference discloses “a cavity disposed vertically towards an upper portion of the extra mass portion.” (App. Br. 4.)

The Appellant argues, “[a]s discussed in the paragraph bridging pages 4 and 5 of the Applicant's disclosure, ‘a large portion of the muscle back portion can be positioned under the cavity so that mass is still concentrated towards the bottom of the club head, thus aiding the ball to get airborne after contact.’” (App. Br. 4-5.) “This combines the advantage of the muscle back, i.e., more quickly airborne, with the advantage of a cavity back, i.e., lateral forgiveness, in a golf club that from its exterior looks like a muscle back.” (App. Br. 5.)

We are not persuaded by Appellant's argument. We agree with the Examiner that the cited prior art supports a prima facie case of obviousness. Figure 4 of Viollaz appears to show a large portion of the muscle back portion, labeled as element 11 in the figure, positioned under the cavity 5 so that its mass is concentrated towards the bottom of the club head. Note Viollaz, Fig. 4, element 11 below the cavity is thicker and wider than Fig. 4, element 3, above the cavity. Thus, Viollaz, Fig. 4 discloses the larger portion of the muscle back portion positioned under the cavity, and the cavity is toward an upper portion of the muscle back portion.

#### CONCLUSION OF LAW

Viollaz discloses a cavity disposed vertically towards an upper portion of the extra mass portion. The rejection of claim 20 is affirmed. Claims 7, 9-10, 20, 23, and 26-27 fall with claim 20.

#### Claim 22

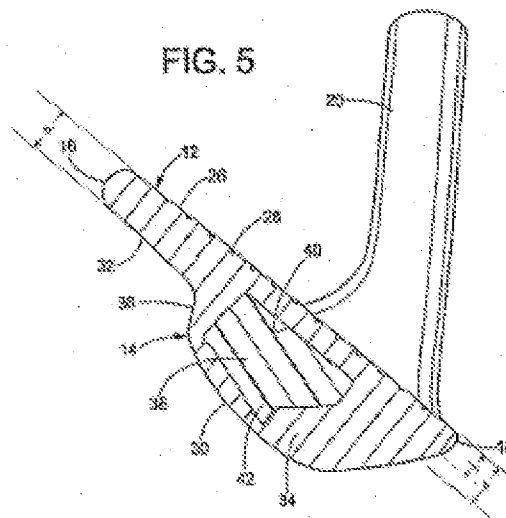
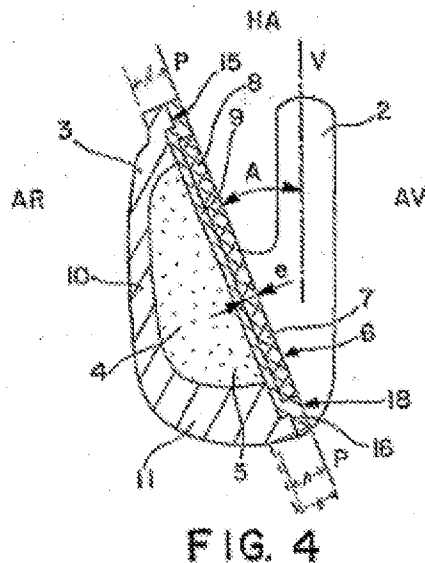
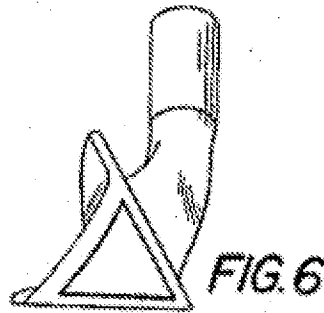
Claim 22 recites "a distance between the front surface and the rear surface adjacent the top edge being greater than a distance between the front surface and the rear surface adjacent the sole," as claimed.

#### ISSUE

The issue is does the prior art disclose a golf club head comprising "a distance between the front surface and the rear surface adjacent the top edge being greater than a distance between the front surface and the rear surface adjacent the sole."

## FINDINGS OF FACT

1. Below is a reproduction of the figures from page 6 of the Brief.



The figures show Elkins '558, Fig. 6; Viollaz, Fig. 4; and Specification, Fig. 5, and are as annotated by Appellant. As reproduced above, Appellant's Fig. 5 is annotated with "a" and "b", wherein "a" is the distance from the front surface to the rear surface at the top edge and "b" is the distance between the front surface and the rear surface at the sole. In Figure 5, 12 is the front

surface, 14 is the rear surface, 16 is the top edge and 18 is the sole. (Spec. 3.)

## ANALYSIS

The Examiner argues that in both Elkins patents the distance between the front surface and the rear surface adjacent a top edge is much less than the distance between the front surface and the rear surface adjacent the sole. (Ans. 11.)

Appellant argues that, even though Elkins '558 may disclose a point at the front of the intersection between the front face and the sole, the sole is very wide at the bottom of the club head. (App. Br. 5.) Appellant argues, that, in contrast, in Appellant's club the distance between the front surface and the rear surface adjacent the top edge, depicted as dimension a, is greater than the distance between the front surface and the rear surface adjacent the sole depicted as dimension b. (App. Br. 7.) Thus, Appellant argues that this limitation is not found in any of the references cited in the final Office Action. (App. Br. 7.) Moreover, Appellant submits that one skilled in the art would not modify any of the references to have such a configuration. (App. Br. 7.)

The Examiner argues that he is relying on Elkins '558 Figure 6 not on Villolaz, Figure 4 for this feature. (Ans. 11.) However, the golf club of Figure 6 of '558 has a front surface, a rear surface and a large bottom surface or sole, whereas the golf club embodiment in Specification, Figure 5, has a front surface and a rear surface, with a very small sole 18 (bottom surface). Elkins '558 does not show a distance between the front surface

and the rear surface adjacent the top edge being greater than a distance between the front surface and the rear surface adjacent the sole, as claimed. Thus, we do not find that the Examiner has provided sufficient evidence of a distance between the front surface and the rear surface adjacent the top edge being greater than a distance between the front surface and the rear surface adjacent the sole, as claimed. The rejection is reversed.

#### CONCLUSION OF LAW AND DECISION

In view of the above, we conclude that the rejection of claims 7, 9-10, 20, 23, and 26-27 is affirmed, and the rejection of claim 22 is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

#### AFFIRMED-IN-PART

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